

MA331A — IRON AND STEEL FOUNDRIES
SHIPMENTS

DEFINITIONS AND SPECIAL INSTRUCTIONS

1. Scope of survey

This survey covers producers of ferrous castings. This includes producers of ferrous castings "for own use" as well as for commercial sale.

2. Figures to be reported

Companies with more than one establishment manufacturing the products covered by this survey are requested to complete a separate report form for each location. If you have not received a separate form for each of your establishments, please call the contact listed on the report form or write to the U.S. Census Bureau for additional forms.

a. Quantity and value of shipments

For the purpose of this report, the weight of castings reported should be the weight of the castings before machining. The removal of gates, users, or sprues, trumbling, dipping, and sandblasting does not constitute machining operations.

If you operate a machine shop at the same location as your foundry and the before-machining weight of castings is not available from book records, your best estimates are acceptable.

b. Shipments

Shipments for sale — Castings shipped to the trade.

Column (1) — Report the weight in short tons (2,000 pounds) of each type of casting shipped to the trade during the year, except investment castings which should be reported in pounds.

Column (2) — Report shipments in thousands of dollars for only item codes 1095, 1495, 2095, 3095, and 4095. These codes are for the total of each metal group and are for shipment to the trade during the year.

Column (3), shipments for own use — Report the weight in short tons (2,000 pounds), except investment castings which should be reported in pounds. Each type of casting shipped during the year for use by your company, or an affiliate, subsidiary, or parent company should be reported. Also includes castings produced and consumed at the same location in the production of finished products. The weight of castings produced in your foundry may be used as the basis for an estimate.

Include shipments to other manufacturers but exclude shipments received by you and reshipped without further processing.

3. Definitions

Compacted graphite is characterized by interconnecting graphite intermediate in shape between the flake graphite of gray iron and the spheroidal graphite of ductile iron.

All other gray iron castings — Include abrasives, rolls, chilled iron railroad car wheels, grinding balls, semisteel castings, and pressure and soil pipe fittings that require machining, threading, or assembling.

Cast iron pressure pipe and fittings — Report your tonnage of pipe according to the specified sizes of the inside diameter of the pipe. In allocating fittings to the three size groupings, the largest diameter of the fitting should be used. Include only those fittings that do not require any machining, threading, or assembling.

Pearlitic malleable — Report tonnage of pearlitic malleable castings pursuant to A.S.T.M. (American Society for Testing Materials) Designation, A 220–76.

Alloy steel — Alloy steel is steel which contains alloying elements in excess of the maximum standard ranges of the American Iron and Steel Institute as follows:

Manganese in excess of 1.65%
Silicon in excess of .60%
Copper in excess of .40%
Chromium in excess of .30%

Aluminum, cobalt,
niobium, molybdenum
nickel, titanium,
obtain
tungsten, vanadium,
zirconium, or any other
effect
alloying element

} Any amount
added to

a desired
alloying

High alloy steel castings — High alloy steel castings means heat and/or corrosion-resistant steel castings containing 8 percent or more of chromium or nickel or both with or without molybdenum or other elements.

Railway specialties — Railway specialties and related items. Report as follows:

Type of casting	Code numbers	
	Carbon steel	Alloy steel
Side frames, bolsters, couplers, yokes, draft gear, snubbers (self-contained unit type), hopper doors and frames, and brake beams	3010	3051
Other railway and transit rolling stock castings	3021	3071

REFERENCE LIST

FORM MA331A		
IRON AND STEEL FOUNDRIES SHIPMENTS		
Product code	Item code	Item description
3315111201 3315111107 3315111108 3315111111 3315111117 3315111118 3315113206 3315113101 3315113216 3315113221 XXX	1022 1023 1025 1026 1027 1029 1035 1037 1039 1041 1095	DUCTILE IRON CASTINGS <i>(Report quantity in short tons)</i> Ductile iron pressure pipe ¹ Under 14" (inside diameter) 14" to 24" Over 24" Ductile iron fitting ² Under 14" (inside diameter) 14" to 24" Over 24" Construction and utility castings (manholes, grates, hydrants, etc., excluding pipe and fittings) Automotive uses Machinery uses Other ductile iron castings, except pressure pipe and fittings and construction castings TOTAL
		GRAY IRON CASTINGS <i>(Report quantity in short tons)</i> Molds for heavy ingots Gray iron pressure pipe and fittings ^{1 2} Under 14" (inside diameter) 14" and over (inside diameter) Gray iron soil pipe Gray iron soil pipe fittings ² Automotive uses Construction and utility castings (manholes, grates, hydrants, etc., excluding pipe and fittings) All other gray iron castings (including white iron) except pressure and soil pipe and fittings, and construction castings TOTAL
		MALLEABLE CASTINGS <i>(Report quantity in short tons)</i> Standard Pearlitic ¹ TOTAL

¹ See instructions in Definitions and Special Instructions section.

² Include as fittings only those that do not require machining, threading, or assembling.

REFERENCE LIST — Continued

FORM MA331A		
Product code	Item code	Item description
		STEEL CASTINGS (Except Investment) <i>(Report quantity in short tons)</i>
		Carbon Steel railway specialties ¹
3315131102	3010	Side frames, bolsters, couplers, yokes, draft gear, snubbers (self-contained unit type), hopper doors and frames, and brake beams
3315131103	3021	Other carbon railway and transit rolling stock castings
3315131215	3031	Other carbon steel castings, including rolls for rolling mills
		Alloy steel except high alloy ¹
3315135101	3051	Railway specialties
3315135113	3061	Other alloy steel castings, including rolls for rolling mills
3315133113	3071	High alloy steel castings ¹
XXX	3095	TOTAL
		STEEL INVESTMENT CASTINGS <i>(Report in pounds)</i>
3315120101	4011	Carbon, including low alloy
3315120106	4051	Alloy, including stainless
XXX	4095	TOTAL

¹ See instructions in Definitions and Special Instructions section.

² Include as fittings only those that do not require machining, threading, or assembling.

Appendix.

General CIR Survey Information, Explanation of General Terms and Historical Note

GENERAL

The CIR program has been providing monthly, quarterly, and annual measures of industrial activity for many years. Since 1904, with its cotton and fats and oils surveys, the CIR program has formed an essential part of an integrated statistical system involving the quinquennial economic census, manufacturing sector, and the annual survey of manufactures. The CIR surveys, however, provide current statistics at a more detailed product level than either of the other two statistical programs.

The primary objective of the CIR program is to produce timely, accurate data on production and shipments of selected products. The data are used to satisfy economic policy needs and for market analysis, forecasting, and decision making in the private sector. The product-level data generated by these surveys are used extensively by individual firms, trade associations, and market analysts in planning or recommending marketing and legislative strategies, particularly if their industry is significantly affected by foreign trade. Although production and shipments information are the two most common data items collected, the CIR program collects other measures also such as inventories, orders, and consumption. These surveys measure manufacturing activity in important commodity areas such as textiles and apparel, chemicals, primary metals, computer and electronic components, industrial equipment, aerospace equipment, and consumer goods.

The CIR program uses a unified data collection, processing, and publication system. The U.S. Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic census, manufacturing sector. The manufacturing sector provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is too large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. The CIR program includes a group of mandatory and voluntary surveys. Typically the monthly and quarterly surveys are conducted on a voluntary basis. Those companies that choose not to respond to the voluntary surveys are required to submit a mandatory annual counterpart corresponding to the more frequent survey.

NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS), 1997

The adoption of the North American Industry Classification System (NAICS) in the 1997 Economic Census has had a major impact on the comparability of current and historic data. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those that left manufacturing are logging and portions of publishing. Prominent among the industries that came into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. The net effect of the classification changes are such that if the 1997 value of shipments data for all manufacturers were tabulated on an SIC basis, it would be approximately 3 percent higher.

Listed below are the NAICS sectors:

- 21 Mining
- 22 Utilities
- 23 Construction
- 31-33 Manufacturing
- 42 Wholesale Trade
- 44-45 Retail Trade
- 48-49 Transportation and Warehousing
- 51 Information
- 52 Finance and Insurance
- 53 Real Estate and Rental and Leasing
- 54 Professional, Scientific, and Technical Services
- 55 Management of Companies and Enterprises
- 56 Administrative and Support and Waste Management and Remediation Services
- 61 Educational Services
- 62 Health Care and Social Assistance
- 71 Arts, Entertainment, and Recreation
- 72 Accommodation and Food Services
- 81 Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

FUNDING

The Census Bureau funds most of the surveys. However, a number of surveys are paid for either fully or partially by other Federal Government agencies or private trade associations. A few surveys are mandated, but all are authorized by Title 13 of the United States Code.

RELIABILITY OF DATA

Survey error may result from several sources including the inability to obtain information about all cases in the survey, response errors, definitional difficulties, differences in the interpretation of questions, mistakes in recording or coding the reported data, and other errors of collection, response, coverage, and estimation. These nonsampling errors also occur in complete censuses. Although no direct measurement of the biases due to these nonsampling errors has been obtained, precautionary steps were taken in all phases of the collection, processing, and tabulation of the data in an effort to minimize their influence.

A major source of bias in the published estimates is the imputing of data for nonrespondents, for late reporters, and for data that fail logic edits. Missing figures are imputed based on period-to-period movements shown by reporting firms. A figure is considered to be an impute if the value was not directly reported on the questionnaire, directly derived from other reported items, directly available from supplemental sources, or obtained from the respondent during the analytical review phase. Imputation generally is limited to a maximum of 10 percent for any one data cell. Figures with imputation rates greater than 10 percent are suppressed or footnoted. The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual yearly movements for nonrespondents may or may not closely agree with the imputed movements. The range of difference between the actual and imputed figures is assumed to be small. The degree of uncertainty regarding the accuracy of the published data increases as the percentage of imputation increases. Figures with imputation rates above 10 percent should be used with caution.

DATA REVISIONS

Statistics for previous years may be revised as the result of corrected figures from respondents, late reports for which imputations were originally made, or other corrections. Data that have been revised by more than 5 percent from previously published data are indicated by footnotes.

DISCLOSURE

The Census Bureau collects the CIR data under the authority of Title 13, United States Code, which specifies that the information can only be used for statistical purposes and cannot be published or released in any manner that would identify a person, household, or establishment. "D" indicates that data in the cell have been suppressed to avoid disclosure of information pertaining to individual companies.

EXPLANATION OF GENERAL TERMS

Capacity. The maximum quantity of a product that can be produced in a plant in 1 day if operating for 24 hours. Includes the capacity of idle plants until the plant is reported to be destroyed, dismantled, or abandoned.

Consumption. Materials used in producing or processing a product or otherwise removing the product from the inventory.

Exports. Includes all types of products shipped to foreign countries, or to agents or exporters for reshipment to foreign countries.

Gross shipments. The quantity or value of physical shipments from domestic establishments of all products sold, transferred to other establishments of the same company, or shipped on consignment, whether for domestic or export sale or use. Shipments of products purchased for resale are omitted. Shipments of products made under toll arrangements are included.

Interplant transfers. Shipments to other domestic plants within a company for further assembly, fabrication, or manufacture.

Inventories. The quantity or value of finished goods, work in progress, and materials on hand.

Machinery in place. The number of machines of a particular type in place as of a particular date whether the machinery was used for production, prototype, or sampling, or was idle. Machinery in place includes all machinery set up in operating positions.

Net receipts. Derived by subtracting the materials held at the end of the previous month from the sum of materials used during the current month.

Production. The total volume of products produced, including: products sold; products transferred or added to inventory after adjustments for breakage, shrinkage, and obsolescence, plus any other inventory adjustment; and products that undergo further manufacture at the same establishment.

Quantities produced and consumed. Quantities of each type of product produced by a company for internal consumption within that same company.

Quantity and value of new orders. The sales value of orders received during the current reporting period for products and services to be delivered immediately or at some future date. Also represents the net sales value of contract change documents that increase or decrease the sales value of the orders to which they are related, when the parties concerned are in substantial agreement as to the amount involved. Included as orders are only those that are supported by binding legal documents such as signed contracts or letter contracts.

Quantity and value of shipments. The figures on quantity and value of shipments represent physical shipments of all products sold, transferred to other establishments of the same company, or shipped on consignment, whether for domestic or export sale. The value represents the net sales price, f.o.b. plant, to the customer or branch to which the products are shipped, net of discounts, allowances, freight charges, and

returns. Shipments to a company's own branches are assigned the same value as comparable appropriate allocation of company overhead and profit. Products bought and resold without further manufacture are excluded.

Stocks. Total quantity of ending finished inventory.

Unfilled orders (backlog). Calculated by adding net new orders and subtracting net sales from the backlog at the end of the preceding year.

HISTORICAL NOTE

Data on iron and steel castings have been collected by the Census Bureau since 1943. Historical data may be obtained from Current Industrial Reports (called Facts for Industry before 1959) available at your local Federal Depository Library.